Amendments to the Specification (other than claims):

Please replace paragraph [0009] with the following amended paragraph:

[0009] In a 2D photonic crystal such as that illustrated in Fig. 5, if light 5 containing a plurality of wavelength ranges ~~(□1, □2, . . . □i, . . .)~~ $\underline{(\lambda_1, \lambda_2, \ldots \lambda_i, \ldots)}$ is introduced into the waveguide 3, light that has the specific wavelength [[□i]] $\underline{\lambda_i}$ corresponding to the resonant frequency of the cavity 4 is trapped in the cavity and while resonating in the interior of the point defect, light 6 of wavelength [[□i]] $\underline{\lambda_i}$ is emitted in the plane-normal direction, in which due to the finite thickness of the slab 1 the ***Q*** factor is small. This means that the photonic crystal in Fig. 5 can be employed as a channel drop filter. Conversely, by shining light into the point defect 4, in the direction normal to the slab 1, light of wavelength [[□i]] $\underline{\lambda_i}$ that resonates within the cavity 4 can be introduced into the waveguide 3. This means that the photonic crystal in Fig. 5 can also be employed as a channel add filter. It will be appreciated that the transfer of light between either the waveguide 3 or the cavity 4 and the exterior can be made to take place by proximately disposing an optical fiber or an optoelectronic transducer in the vicinity of the waveguide end faces or the vicinity of the cavity. Of course, in that case a collimating lens (collimator) may be inserted in between either the waveguide end face or the cavity, and the optical-fiber end face or the optoelectronic transducer.

Please replace paragraph [0011] with the following amended paragraph:

[0011] The fact that, as described above, a channel add/drop filter such as that depicted in Fig. 5 makes it possible to extract as light 6 light of a specific wavelength [[□i]] $\underline{\lambda_i}$ only—contained within an optical signal 5—via the cavity 4 means that the filter may be employed in wavelength monitors.

Please replace paragraph [0013] with the following amended paragraph:

[0013] Nevertheless, in a channel add/drop filter employing a 2D photonic crystal such as illustrated in Fig. 5, within the light of the specific wavelength [[□i]] $\underline{\lambda_i}$ only that portion whose electric-field vector has a component parallel to the principal plane of the 2D photonic crystal 1 can be extracted from the cavity 4 as emitted light 6. On the other hand, the light 5, which is introduced into the waveguide 3 by, for example, an optical fiber, will at times be polarized in a specific direction by the optical fiber or by the impact of the environment leading up to it. For instance, a situation where the electric-field vector of the light of wavelength [[□i]] $\underline{\lambda_i}$ contained in the introduced light 5 is polarized perpendicular to the principal plane of the 2D photonic crystal 1 will mean that light of wavelength [[□i]] $\underline{\lambda_i}$ cannot be monitored using the channel add/drop filter of Fig. 5. Likewise too, in a situation where the electric-field vector of the light of wavelength [[□i]] $\underline{\lambda_i}$ is polarized so as to be inclined with respect to the principal plane of the 2D photonic crystal 1, since within the light only that portion that has an electric-field-vector component parallel to the principal plane of the 2D photonic crystal 1 is what can be monitored within the light of wavelength [[□i]] $\underline{\lambda_i}$ using the channel add/drop filter of Fig. 5,the proportional intensity of the light of wavelength [[λ_i]] $\underline{\lambda_i}$ contained in the introduced light 5 cannot be monitored correctly.

Please replace paragraph [0015] with the following amended paragraph:

[0015] A channel add/drop filter according to one aspect of the present invention includes first and second 2D photonic crystals, and is characterized in that: the first 2D photonic crystal includes a first waveguide made from a line defect and a first cavity made from a point defect, with the first cavity acting to take in light of a specific wavelength from the first waveguide and radiate it outside the first photonic crystal, as well as conversely to introduce light of the specific wavelength into the first waveguide from outside of the first photonic crystal; the second 2D photonic crystal

includes a second waveguide having substantially the same characteristics as the first waveguide, and a second cavity having substantially the same characteristics as the first cavity; and the first and second waveguides are optically connected in series so as to have light in common, and so that when the principal plane of the first 2D photonic crystal and the electric-field vector of the light within the first waveguide form an arbitrary angle [[□]] $\underline{\alpha}$, the principal plane of the second 2D photonic crystal and the electric-field vector of the light within the second waveguide form an angle of ~~□+(□/2)~~ $\underline{\alpha+(\pi/2)}$.

Please replace paragraph [0017] with the following amended paragraph:

[0017] A channel add/drop filter according to another aspect of the present invention Includes first and second 2D photonic crystals, and is characterized in that: the first 2D photonic crystal includes a first waveguide made from a line defect and a first cavity made from a point defect, with the first cavity acting to take in light of a specific wavelength from the first waveguide and radiate it outside the first photonic crystal, or conversely, to introduce light of a specific wavelength into the first waveguide from outside of the first photonic crystal; the second 2D photonic crystal includes a second waveguide having substantially the same characteristics as the first waveguide, and a second cavity having substantially the same characteristics as the first cavity; and via a 50/50 optical coupler the first and second waveguides are parallel-connected to a single optical fiber; wherein the first and second waveguides are optically connected with a 50/50 optical coupler so that when the principal plane of the first 2D photonic crystal and the electric-field vector of the light within the first waveguide form an arbitrary angle [[□]] $\underline{\alpha}$, the principal plane of the second 2D photonic crystal and the electric-field vector of the light within the second waveguide form an angle of ~~□+(□/2)~~ $\underline{\alpha+(\pi/2)}$.

Please replace paragraph [0029] with the following amended paragraph:

[0029] A signal beam is introduced into the waveguide 3 in the first 2D photonic crystal 1a from an optical fiber 11 via, preferably, a spot-size converter 12 and a microstrip waveguide 13. Within light of a specific wavelength [[□i]] $\underline{\lambda_i}$ contained in the light incident into the waveguide 3 in the first 2D photonic crystal 1a, the light portion having an electric-field vector component parallel to the principal plane of the first 2D photonic crystal 1a is trapped in its cavity 4, from where it is emitted.

Please replace paragraph [0031] with the following amended paragraph:

[0031] Of the light of the specific wavelength [[□i]] $\underline{\lambda_i}$ within the light introduced into the waveguide 3 in the second 2D photonic crystal 1b, the portion having an electric-field vector component orthogonal to the principal plane of the first 2D photonic crystal 1a remains. In this situation, inasmuch as the principal planes of the first and second 2D photonic crystals 1a and 1b are in a mutually orthogonal relationship, the electric-field vector component orthogonal to the principal plane of the first 2D photonic crystal 1a is parallel to the principal plane of the second 2D photonic crystal 1b. Of the light of specific wavelength [[□i]] $\underline{\lambda_i}$, the portion having an electric-field vector component parallel to the principal plane of the second 2D photonic crystal 1b is thus trapped in the cavity 4 in the second 2D photonic crystal 1b, from where it is emitted.

Please replace paragraph [0032] with the following amended paragraph:

[0032] This means that a first light portion of specific wavelength [[□i]] $\underline{\lambda_i}$, emitted from the cavity 4 in the first 2D photonic crystal 1a, and a second light portion of the specific wavelength [[□i]] $\underline{\lambda_i}$, emitted from the cavity 4 in the second 2D photonic crystal 1b, have electric-field vectors that are orthogonal to each other. Then by detecting with photodetectors and compounding the intensities of these first and

second light portions, the proportional intensity of the light of the specific wavelength [[□i]] $\underline{\lambda_i}$ within the introduced signal light can be monitored accurately regardless of whether the light of the specific wavelength [[□i]] $\underline{\lambda_i}$ is polarized or not.

Please replace paragraph [0035] with the following amended paragraph:

[0035] In Embodiment 2 thus, within light of a specific wavelength [[□i]] $\underline{\lambda_i}$ contained in the light incident into the waveguide 3 in the first 2D photonic crystal 1c, the light portion having an electric-field vector component parallel to the principal plane of the first 2D photonic crystal 1c is trapped in its cavity 4, from where it is emitted.

Please replace paragraph [0036] with the following amended paragraph:

[0036] The remaining light, which was not captured in the cavity 4 in the first 2D photonic crystal 1c, is introduced into the polarization-maintaining fiber 14b. Of the light of the specific wavelength [[□i]] $\underline{\lambda_i}$ within the light introduced into the polarization-maintaining fiber 14b, the portion having an electric-field vector component orthogonal to the principal plane of the first 2D photonic crystal 1c remains. In this situation, inasmuch as the polarization-maintaining fiber 14b is twisted by $\pi/2$ from the first 2D photonic crystal 1c end to the second 2D photonic crystal 1d end, in turn the electric-field vector component of the light portion of the specific wavelength [[□i]] $\underline{\lambda_i}$ is also rotated by $\pi/2$ and is introduced into the waveguide 3 in the second 2D photonic crystal 1d.

Please replace paragraph [0037] with the following amended paragraph:

[0037] This means that the light portion of the specific wavelength [[□i]] $\underline{\lambda_i}$, which had had the electric-field vector component orthogonal with respect to the principal plane of the first 2D photonic crystal 1c, within the second 2D photonic crystal 1d becomes

parallel to its principal plane. The light portion of the specific wavelength [[□i]] $\underline{\lambda_i}$ having the electric-field vector component parallel to the principal plane of the second 2D photonic crystal 1d thus is trapped in the cavity 4 in the second 2D photonic crystal 1d, from where it is emitted.

Please replace paragraph [0038] with the following amended paragraph:

[0038] Accordingly, a first light portion of specific wavelength [[□i]] $\underline{\lambda_i}$, emitted from the cavity 4 in the first 2D photonic crystal 1c, and a second light portion of the specific wavelength [[□i]] $\underline{\lambda_i}$, emitted from the cavity 4 in the second 2D photonic crystal 1d, are light portions that had had electric-field vectors in essence orthogonal to each other. Consequently, by detecting with photodetectors and compounding the intensities of these first and second light portions, the proportional intensity of the light of the specific wavelength [[□i]] $\underline{\lambda_i}$ within the introduced signal light can be monitored accurately regardless of whether the light of the specific wavelength [[□i]] $\underline{\lambda_i}$ is polarized or not.

Please replace paragraph [0040] with the following amended paragraph:

[0040] An optical signal having been split equally by the optical coupler 15 and conducted into the first polarization-maintaining fiber 14c is introduced into the waveguide 3 in the first 2D photonic crystal 1e via, preferably, a spot-size converter 12 and a microstrip waveguide 13. Within light of a specific wavelength [[□i]] $\underline{\lambda_i}$ contained in the light incident into the waveguide 3 in the first 2D photonic crystal 1e, the light portion having an electric-field vector component parallel to the principal plane of the first 2D photonic crystal 1e is trapped in its cavity 4, from where it is emitted.

Please replace paragraph [0041] with the following amended paragraph:

[0041] In a similar fashion, the optical signal having been split equally by the optical coupler 15 and conducted into the second polarization-maintaining fiber 14d is introduced into the waveguide 3 in the second 2D photonic crystal 1f via, preferably, a spot-size converter 12 and a microstrip waveguide 13. Within light of a specific wavelength [[□ᵢ]] $\underline{\lambda_i}$ contained in the light incident into the waveguide 3 in the second 2D photonic crystal 1f, the light portion having an electric-field vector component parallel to the principal plane of the second 2D photonic crystal 1f is trapped in its cavity 4, from where it is emitted.

Please replace paragraph [0042] with the following amended paragraph:

[0042] What is to be emphasized herein is that the principal planes of the first and second 2D photonic crystals 1e and 1f are disposed so as to be in a mutually orthogonal relationship. This means that a first light portion of specific wavelength [[□ᵢ]] $\underline{\lambda_i}$, emitted from the cavity 4 in the first 2D photonic crystal 1e, and a second light portion of the specific wavelength [[□ᵢ]] $\underline{\lambda_i}$, emitted from the cavity 4 in the second 2D photonic crystal 1f, have electric-field vectors that are orthogonal to each other. Accordingly, by detecting with photodetectors and compounding the intensities of these first and second light portions, the proportional intensity of the light of the specific wavelength [[□ᵢ]] $\underline{\lambda_i}$ within the introduced signal light can be monitored accurately regardless of whether the light of the specific wavelength [[□ᵢ]] $\underline{\lambda_i}$ is polarized or not. It should be understood that the first and second 2D photonic crystals 1e and 1f may be connected directly to the 50/50 optical coupler 15, without the polarization-maintaining fibers 14c and 14d intervening.

Please replace paragraph [0045] with the following amended paragraph:

[0045] An optical signal having been split equally by the optical coupler 15 and conducted into the first polarization-maintaining fiber 14e is introduced into the waveguide 3 in the first 2D photonic crystal 1g. Within light of a specific wavelength [[□i]] $\underline{\lambda_i}$ contained in the light incident into the waveguide 3 in the first 2D photonic crystal 1g, the light portion having an electric-field vector component parallel to the principal plane of the first 2D photonic crystal 1g is trapped in its cavity 4, from where it is emitted. In the same manner, the optical signal having been split equally by the optical coupler 15 and conducted into the second polarization-maintaining fiber 14f is introduced into the waveguide 3 in the second 2D photonic crystal 1h. Within light of a specific wavelength [[□i]] $\underline{\lambda_i}$ contained in the light incident into the waveguide 3 in the second 2D photonic crystal 1h, the light portion having an electric-field vector component parallel to the principal plane of the second 2D photonic crystal 1h is trapped in its cavity 4, from where it is emitted.

Please replace paragraph [0047] with the following amended paragraph:

[0047] This means that a first light portion of specific wavelength [[□i]] $\underline{\lambda_i}$, emitted from the cavity 4 in the first 2D photonic crystal 1g, and a second light portion of the specific wavelength [[□i]] $\underline{\lambda_i}$, emitted from the cavity 4 in the second 2D photonic crystal 1h, are light portions that had had electric-field vectors in essence orthogonal to each other. Accordingly, by detecting with photodetectors and compounding the intensities of these first and second light portions, the proportional intensity of the light of the specific wavelength [[□i]] $\underline{\lambda_i}$ within the introduced signal light can be monitored accurately regardless of whether the light of the specific wavelength [[□i]] $\underline{\lambda_i}$ is polarized or not. It should be understood that the first 2D photonic crystal 1g maybe connected directly to the 50/50 optical coupler 15, without the first polarization-maintaining fiber 14e intervening.

Please replace pending abstract with the following abstract of the disclosure:

ABSTRACT

The channel add/drop filter includes first and second 2D photonic crystals, and the first 2D photonic crystal includes a first waveguide and a first cavity, with the first cavity acting to take in light of a specific wavelength from the first waveguide and radiate it outside the first photonic crystal, and the second 2D photonic crystal includes a second waveguide with substantially the same characteristics as the first waveguide and a second cavity with substantially the same characteristics as the first cavity. The first and second waveguides are optically connected so that when the principal plane of the first 2D photonic crystal and the electric-field vector of the light within the first waveguide form an arbitrary angle [[□]] α, the principal plane of the second 2D photonic crystal and the electric-field vector of the light within the second waveguide form an angle of ~~□ + (□/2)~~ $\underline{\alpha + (\pi/2)}$.